BULLETIN

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THE PAULDING COUNTY EXPERIMENT FARM

THIRD ANNUAL REPORT, FOR 1913

The first and second reports on the work of this farm were made in Bulletins 241 and 258. The present report covers the calendar year, 1913.

When purchased, this farm was without buildings and was insufficiently drained. A barn 36x70 feet in size and a four-room cottage have been built. These buildings are not sufficient for the proper management of the farm. There should be another and larger house, to accommodate the farm superintendent, who should live on the farm and have an office there, and there should be a stable in which to feed cattle or sheep during the winter. There should also be more drainage, although a considerable amount was done in 1912.

PERSONNEL

Mr. Charles McIntire, who had had the general management of the various county experiment farms, resigned in August, 1913, and Mr. P. C. Herron was placed in charge of the Miami county and Paulding county farms for the remainder of the year, with the expectation of appointing a superintendent for each farm who should also serve as county agricultural agent.

CROP ROTATION AND SOIL FERTILITY EXPERIMENTS

Three crop rotations are in progress on this farm, namely:

Rotation I: Corn, oats, wheat, clover.

Rotation II: Corn, soybeans, wheat, clover.

Rotation III: Sugar beets, wheat, clover.

Rotation I is being conducted in duplicate, one set of plots being used in a test of fertilizers and manure, and another in a comparison of varieties.

Diagram I shows the arrangement of plots in the cereal rotations, and Diagram II shows the plan of the sugar beet rotation.

The scheme of fertilizing in the cereal rotation is shown in Table I. In the sugar beet rotation the fertilizers are all applied to the beet crop, as shown in Table V.

The results of the fertility work to date are given in Tables II to VII.

TABLE I: Plan of fertilizing in cereal rotations, Paulding County Experiment Farm

Pounds of fertilizing materials per acre for each crop

Plot No.	Acid phosphate	Muriate potash	Nitrate soda	Powdered limestone	Acid phosphate	Muriate potash	Nitrate soda	Acid phosphate	Muriate potash	Nitrate soda
	Rotation I: Corn, oats, wheat, clover									
	On Corn				On Oats			On Wheat		
1	...	..	..	.....	...	..	..	...	..	..
2	200	..	..	.....	100	..	..	200	..	..
3	200	50	..	.....	100	20	..	200	20	..
4	...	..	..	.....	...	..	..	...	..	..
5	200	50	50	.....	100	20	30	200	20	80
6	200	50	50	4,000*	100	20	30	200	20	80
7	...	..	..	.....	...	..	..	...	..	..
8	Manure, 8 tons		..	.....	...	..	..	200	50	50
9	Manure, 8 tons, phosphated			.....	...	..	..	200	50	50
10	...	..	..	.....	...	..	..	...	..	..
	Rotation II: Corn, soybeans, wheat, clover									
	On Corn				On Soybeans			On Wheat		
1	...	..	..	..	...	..	..	...	..	..
2	200	..	..	..	100	..	..	200	..	..
3	200	50	..	..	100	20	..	200	20	..
4	...	..	..	..	...	..	..	...	..	..
5	200	50	50	..	100	20	30	200	20	80
6	130	50	20	..	70	20	10	160	20	20
7	...	..	..	..	...	..	..	...	..	..
8	160	20	20	..	100	..	..	170	..	30
9	160	20	20	†	100	..	..	170	..	30
10	...	..	..	..	..	..	..	...	..	..

Total fertilizing materials for one rotation; constituents and percentage composition

Plot No.	Total fertilizing materials for one rotation: Nitrate soda	Acid phosphate	Muriate potash	Total pounds	Fertilizing constituents contained: Ammonia	Phosphoric acid	Potash	Percentage composition: Ammonia	Phosphoric acid	Potash
	Rotation I: Corn, oats, wheat, clover									
2	...	500	..	500	..	70	..	.	14	.
3	...	500	90	590	..	70	45	.	12	7
5	160	500	90	750	30	70	45	4	9.5	6
6	160	500	90	750	30	70	45	4	9.5	6
8	...	300	..	300	9.5	28	25	3	9	8
9	...	300	..	300	9.5	28	25	3	9	8
	Rotation II: Corn, soybeans, wheat, clover									
2	...	500	..	500	..	70	..	.	14	.
3	...	500	90	590	..	70	45	.	12	7
5	160	500	90	750	30	70	45	4	9.5	6
6	50	360	90	500	9.5	50	45	2	10	9
8	50	430	20	500	9.5	60	10	2	12	3
9	50	430	20	500	9.5	60	10	2	12	2

TABLE II: Fertilizers and manures on crops grown in rotation on Paulding County Experiment Farm

Rotation I—Corn-oats-wheat-clover

Plot No.	Treatment per acre	Yield per acre				Increase or decrease (−) per acre				Plot No.
		1913		2-yr. average		1913		2-yr. average		
		Grain Bus.	Stover or straw Lbs.	Grain Bus.	Stover or straw Lbs.	Grain Bus.	Stover or straw Lbs.	Grain Bus.	Stover or straw Lbs.	
	Corn									
1	None	41.93	3,100	53.46	3,800	....	...	....	...	1
2	Acid phosphate, 200 lbs.	31.00	3,600	50.50	4,000	−13.12	417	−4.58	183	2
3	Acid phosphate, 200 lbs; muriate potash, 50 lbs.	36.79	3,500	49.96	4,075	−9.52	233	−6.74	241	3
4	None	48.50	3,350	58.32	3,850	....	...	....	...	4
5	Acid phosphate, 200 lbs.; muriate potash, 50 lbs.; nitrate soda, 50 lbs	43.21	3,700	55.53	3,975	−3.67	350	−1.09	216	5
6	Acid phos., 200 lbs.; mur. potash, 50 lbs.; nit. soda, 50 lbs.; sugar factory lime, 2 tons.	39.86	3,800	48.18	3,875	−5.40	450	−6.76	208	6
7	None	43.64	3,350	53.25	3,575	....	...	....	...	7
8	Untreated manure, 8 tons	50.50	3,950	56.75	4,025	6.22	600	3.85	425	8
9	Phosphated manure, 8 tons	41.79	3,650	48.11	4,125	−3.14	300	4.44	500	9
10	None	45.57	3,350	52.21	3,650	....	...	....	...	10
	Average unfertilized yield	44.91	3,287	54.31	3,718	....	...	....	...	
	Oats									
1	None	40.31	2,435	47.11	3,442	....	...	....	...	1
2	Acid phosphate, 100 lbs.	40.00	3,020	48.59	3,520	−.52	317	1.14	34	2
3	Acid phosphate, 100 lbs.; muriate potash, 20 lbs.	41.41	1,975	50.94	2,825	.68	−997	3.15	−704	3
4	None	40.94	3,240	48.12	3,572	....	...	....	...	4
5	Acid phosphate, 100 lbs.; muriate potash, 20 lbs.; nitrate soda, 30 lbs.	40.62	2,300	53.28	3,007	.62	−587	5.70	−312	5
6	Acid phosphate, 100 lbs.; muriate potash, 20 lbs.; nitrate soda, 30 lbs.	37.81	3,140	51.09	3,305	−1.25	607	4.06	238	6
7	None	38.12	2,180	46.48	2,812	....	...	....	...	7
8	(Manured on corn)	38.12	3,130	45.23	3,115	.21	593	....	...	8
9	(Manured on corn)	38.28	2,025	43.98	2,480	.57	−868	....	...	9
10	None	37.50	3,250	46.72	3,292	....	...	....	...	10
	Average unfertilized yield	39.22	2,776	47.11	3,280	....	...	....	...	

TABLE III: Fertilizers and manure on crops grown in rotation on Paulding County Experiment Farm. Rotation I—Corn-oats-wheat-clover

Wheat, 1913

Plot No.	Treatment	Yield per acre Bus.	Increase or decrease (—) per acre Bus.
1	None	49.33	....
2	Acid phosphate, 200 lbs.	38.58	—7.86
3	Acid phosphate, 200 lbs.; muriate potash, 20 lbs.	38.50	—5.06
4	None	40.67	....
5	Acid phosphate, 200 lbs.; muriate potash, 20 lbs.; nitrate soda, 80 lbs.	42.58	2.36
6	Acid phosphate, 200 lbs.; muriate potash, 20 lbs.; nitrate soda, 80 lbs.[1]	40.58	.80
7	None	39.33	....
8	Acid phosphate, 200 lbs.; muriate potash, 50 lbs.; nitrate soda, 50 lbs.[2]	42.33	3.03
9	Acid phosphate, 200 lbs.; muriate potash, 50 lbs.; nitrate soda, 50 lbs.[3]	39.42	.14
10	None	39.25	....
	Average unfertilized yield	42.14	....

[1]Lime carbonate on corn. [2]Untreated manure on corn. [3]Phosphated manure on corn.

TABLE IV: Fertilizers and manure on crops grown in rotation on Paulding County Experiment Farm. Rotation II—Corn-soybeans-wheat-clover

Plot No.	Treatment per acre	Yield per acre		Increase or decrease(—)per acre	
		Grain Bus.	Stover or straw Lbs.	Grain Bus.	Stover or straw Lbs.
	Corn, 1913				
1	None	43.57	2,900	....	...
2	Acid phosphate, 200 lbs.	35.57	3,100	—7.36	367
3	Acid phosphate, 200 lbs.; muriate potash, 50 lbs.	38.43	3,200	—3.85	633
4	None	41.64	2,400	....	...
5	Acid phos., 200 lbs.; mur. potash, 50 lbs.; nit. soda, 50 lbs.	48.50	3,450	3.84	700
6	Acid phos., 130 lbs.; mur. potash, 50 lbs.; nit. soda, 10 lbs.	49.36	3,000	1.67	—100
7	None	50.71	3,450	....	...
8	Acid phos., 160 lbs.; mur. potash, 20 lbs.; nit. soda, 20 lbs.	45.64	3,050	—4.67	—117
9	Acid phos., 160 lbs.; mur. potash, 20 lbs.; nit. soda, 20 lbs;	44.64	3,550	—5.26	667
10	None	49.50	2,600	....	...
	Average unfertilized yield	46.36	2,837	....	...
	Wheat, 1913				
1	None	40.67	....	....	...
2	Acid phosphate, 200 lbs.	42.83	....	2.38	...
3	Acid phosphate, 200 lbs.; muriate potash, 20 lbs.	41.67	....	1.45	...
4	None	40.00	....	....	...
5	Acid phos., 200 lbs.; mur. potash, 20 lbs.; nit. soda, 80 lbs.	45.96	....	6.28	...
6	Acid phos., 160 lbs.; mur. potash, 20 lbs.; nit. soda, 20 lbs.	39.04	....	—.32	...
7	None	39.04	....	....	...
8	Acid phosphate, 170 lbs.; nitrate soda, 30 lbs.	41.67	....	3.09	...
9	Acid phosphate, 170 lbs.; nitrate soda, 30 lbs.	37.17	....	—.96	...
10	None	37.67	....	....	...
	Average unfertilized yield	39.34	....	....	...

TABLE V: Fertilizers on SUGAR BEETS at Paulding County Experiment Farm, 1913, and 2-year average. Rotation III—Beets-oats-clover. Block L.

Pl't No.	Treatment per acre	1913			2-year average			Value of increase	Cost of treatment	Net gain or loss (—)
		Yield per acre	Increase or decrease (—) per acre	Percent of sugar	Yield per acre	Increase or decrease (—) per acre	Percent of sugar			
		Tons	Tons		Tons	Tons		$	$	
1	None	9.875	.....	14.0	11.862	.....	....	.....	....	....
2	Acid phosphate, 600 lbs.	11.050	.....	14.8	12.025	—0.130	13.8	—0.65	4.80	—5.45
3	Muriate of potash, 200 lbs.	7.800	—4.425	14.7	9.575	—2.871	13.6	—14.35	5.00	—19.35
4	None	13.400	.....	14.4	12.737	.....	13.4	.....	....	....
5	Nitrate of soda, 200 lbs	12.375	—.283	14.3	13.112	0.837	13.5	4.18	6.00	—1.82
6	Acid phosphate, 600 lbs. + Nitrate of soda, 200 lbs	15.050	3.133	15.4	13.537	1.725	14.3	8.62	10.80	—2.18
7	None	11.175	.....	14.4	11.350	.....	13.7	.....	....	....
8	Acid phosphate, 600 lbs. + Muriate of potash, 200 lbs.	17.250	6.458	13.9	13.900	2.969	13.3	14.84	9.80	5.04
9	Muriate of potash, 200 lbs. + Nitrate of soda, 200 lbs	14.050	3.641	14.8	13.775	3.265	14.2	16.32	11.00	5.32
10	None	10.025	.....	14.6	10.087	.....	13.9	.....	....	....
11	Acid phosphate, 600 lbs. + Muriate of potash, 200 lbs. + Nitrate of soda, 200 lbs.	15.450	5.133	14.7	15.600	5.008	13.7	25.04	15.80	9.24
12	Acid phosphate, 600 lbs. + Muriate of potash, 200 lbs. + Nitrate of soda, 200 lbs + Sugar factory lime, 2 tons.	16.125	5.516	15.2	15.137	4.041	14.0	20.20	18.80	1.40
13	None	10.900	.....	14.6	11.600	.....	14.0	.....	....	....
14	Sugar factory lime, 2 tons.	13.225	2.666	14.9	12.400	1.058	13.8	5.29	3.00	2.29
15	Floats, 1,200 lbs.	10.800	0.583	14.6	11.625	0.541	14.0	2.70	5.80	—3.10
16	None	9.875	.....	15.2	10.825	.....	14.3	.....	....	....
17	Yard manure, 10 tons.	10.500	0.150	14.2	11.300	0.354	13.5	1.77	2.50	—0 73
18	Fresh manure, 10 tons.	13.700	2.875	14.2	13.337	2.271	13.6	11.35	2.50	8.85
19	None	11.300	.....	14.9	11.187	.....	14.0	.....	....	....
20	Fresh manure, 10 tons. + Sugar factory lime, 2 tons.	12.300	0.058	14.6	12.637	1.094	14.4	5.47	5.50	—0.03
21	Fresh manure, 10 tons. + Acid phosphate, 300 lbs.	15.000	1.816	14.5	14.487	2.588	....	14.94	4.90	10.04
22	None	14.125	.....	14.9	.....	.....	....	.....	....	....
23	Mixed fertilizer, 2-8-2, 500 lbs.	14.075	0.125	14.7	.....	.....	....	0.62	6.00	....
24	Acid phosphate, 287 lbs. + Muriate of potash, 20 lbs. + Nitrate of soda, 52 lbs.	14.000	0.225	15.4	.....	.....	....	1.12	4.50	—3.38
25	None	13.600	.....	14.7	.....	.....	....	.....	....	....
26	Acid phosphate, 300 lbs. + Muriate of potash, 100 lbs. + Nitrate of soda, 100 lbs	14.150	0.550	14.0	.....	.....	....	2.75	7.90	—5.15
27	Steamed bonemeal, 175 lbs. + Muriate of potash, 100 lbs. + Nitrate of soda, 67 lbs.	14.375	0.775	14.3	.....	.....	....	3.87	7.00	—3.13
	Average unfertilized yield...	11,586	.....	....	11,703	.....	....	....	....	....

Plots 22 to 27 were injured by wireworms in 1912.

Prices used in computing value of increase and cost of treatment: Sugar beets, $5.00 per ton; 2-8-2 fertilizer, $21.60 per ton; steamed bonemeal, $28.80 per ton; muriate of potash, 2½c per lb.; nitrate of soda, 3c per lb.; acid phosphate, $16 per ton; manure 25c per ton, and sugar factory lime, $1.50 per ton.

TABLE VI: Residual effect on oats and clover of fertilizer applied to sugar beets at Paulding County Experiment Farm.

Plot No.	Treatment per acre on sugar beets	Oats								Clover hay 1913		Plot No.
		1913				2-year average						
		Yield per acre		Increase or decrease (—) per acre		Yield per acre		Increase or decrease (—) per acre		Yield	In-crease or de-crease (—)	
		Grain Bus.	Straw Lbs.	Grain Bus.	Straw Lbs.	Grain Bus.	Straw Lbs.	Grain Bus.	Straw Lbs.	Lbs.	Lbs.	
1	None	41.25	3,330	....	...	59.06	4,360	....	...	7,378	...	1
2	Acid phosphate, 600 lbs.	40.00	2,170	1.02	—807	52.34	3,175	—4.54	—885	7,378	022	2
3	Muriate of potash, 200 lbs.	38.75	2,890	2.04	267	52.81	4,060	—1.89	300	6,744	—589	3
4	None	34.44	2,270	....	...	52.53	3,460	....	...	7,311	...	4
5	Nitrate of soda, 200 lbs	40.00	3,370	3.08	1,283	54.06	5,020	2.32	1,638	7,156	149	5
6	Acid phosphate, 600 lbs.; nitrate of soda, 200 lbs	44.53	2,325	5.14	422	53.67	3,292	2.73	—10	6,889	185	6
7	None	41.87	1,720	....	...	50.15	3,225	....	...	6,400	...	7
8	Acid phosphate, 600 lbs.; muriate of potash, 200 lbs	39.37	2,690	—2.03	858	55.46	4,025	5.33	871	6,044	251	8
9	Muriate of potash, 200 lbs.; nitrate of soda, 200 lbs.	40.78	3,195	—.16	1,252	52.96	4,492	2.86	1,411	5,867	682	9
10	None	40.47	2,055	....	...	50.08	3,010	....	.....	4,578	...	10
11	Acid phosphate, 600 lbs.; muriate of potash, 200 lbs.; nitrate of soda, 200 lbs.	44.84	3,815	4.37	1,460	51.09	4,552	1.40	1,188	8,956	3,289	11
12	Acid phosphate, 600 lbs.; muriate of potash, 200 lbs.; nit. of soda, 200 lbs.; sugar factory lime, 2 tons.	47.97	3,065	7.50	410	55.86	4,262	6.56	544	5,444	—2,311	12
13	None	40.47	2,955	...	...	48.90	4,072	....	...	8,844	.....	13
14	Sugar factory lime, 2 tons[1]	40.78	2,243	1.14	—337	....	.....	....	...	6,133	—1,511	14
15	Floats, 1,200 lbs.	41.87	3,210	3.07	1,002	55.63	4,485	5.92	954	9,444	3,000	15
16	None	37.97	1,835	....	...	50.11	3,260	....	.	5,244	.....	16
17	Yard manure, 10 tons.	44.53	3,175	6.51	942	.....	.....	....	...	9,711	3,356	17
18	Fresh manure, 10 tons.	41.72	2,165	3.65	—467	.....	.....	....	...	6,333	—1,134	18
19	None	38.12	3,030	....	...	.....	.....	....	...	8,578	.....	19
20	Fresh manure, 10 tons; sugar factory lime, 2 tons.	42.19	2,400	5.58	—285	.....	.....	...	...	5,933	—1,712	20
21	Fresh manure, 10 tons; acid phosphate, 300 lbs.	40.94	3,140	5.84	800	.....	... .	....	...	5,644	—1,067	21
22	None	33.59	1,995	....	...	.....	.....	....	...	5,778	.....	22
23	Mixed fertilizer, 2-8-2, 500 lbs	37.81	2,890	3.18	602	.....	.....	....	...	5,533	7	23
24	Acid phosphate, 287 lbs.; muriate of potash, 20 lbs.; nitrate of soda, 52 lbs.	36.41	2,035	.73	—547	.. .	.....	....	...	5,356	82	24
25	None	36.72	2,875	....	...	.....	.....	....	...	5,022	.....	25
26	Acid phosphate, 300 lbs.; muriate of potash, 100 lbs.; nitrate of soda, 100 lbs.	39.37	2,190	2.65	—685	.. ..	.....	....	...	5,600	578	26
27	Steamed bonemeal, 175 lbs.; muriate of potash, 100 lbs.; nit. of soda, 67 lbs.	36.41	2,985	—.31	110	.....	.....	....	...	5,689	667	27
	Average unfertilized yield.	38.78	2,452	....	...	51.48	3,655	....	...	6,570	...	

[1]No record for 1912 for Plot 14 nor for Nos. 17 to 27, inclusive.

TABLE VII: Fertilizers and manure in sugar beets-wheat-clover rotation, Paulding County Experiment Farm: Financial outcome of first rotation.

Plot No.	Treatment	Value of increase per acre				Cost of fertilizers	Net gain (+) or loss (−)
		Beets	Oats	Clover	Total		
2	Acid phosphate	$−0.65	$−2.25	$ 0.09	$−2.81	$4.80	$−7.61
3	Muriate of potash	−14.35	−0.27	−2.36	−16.98	5.00	−21.98
5	Nitrate of soda	4.18	2.33	0.60	7.11	6.00	1.11
6	Acid phosphate and nitrate of soda	8.62	0.81	0.74	10.17	10.80	−.63
8	Acid phosphate and muriate of potash	14.84	2.47	1.00	18.31	9.80	8.51
9	Muriate of potash and nitrate of soda	16.32	2.27	2.73	21.32	11.00	10.32
11	Acid phos., mur. of potash and nit. of soda	25.04	1.61	13.16	39.81	15.80	24.01
12	Acid phos., mur. potash, nitrate of soda and sugar factory lime	20.20	2.51	−9.24	13.47	18.80	−5.33
14	Sugar factory lime	5.29	....	−6.04	−0.75	3.00	−3.75
15	Floats	2.70	2.73	12.00	17.43	5.80	11.63
17	Yard manure	1.77	2.90	13.42	18.09	2.50	15.59
18	Fresh manure	11.35	0.63	−4.54	7.44	2.50	4.94
20	Fresh manure and sugar factory lime	5.47	1.39	−6.85	....	5.50	−5.50
21	Fresh manure and acid phosphate	14.94	2.55	−4.27	13.22	4.90	8.32
23	Mixed fertilizer (2-8-2)	0.62	1.56	0.03	2.21	6.00	−3.79
24	Home mixture (2-8-2)	1.12	−0.33	0.33	1.12	4.35	−3.23
26	Same as on 11 but in half quantities	2.75	0.11	2.31	5.17	7.90	−2.73
27	Steamed bonemeal, mur. potash and nit. soda	3.87	0.02	2.67	6.56	7.13	−0.57

THE CEREAL ROTATIONS

In these rotations, in which the fertilizers are used in much smaller quantities than in the sugarbeet rotation, it is not possible as yet to trace any definite relation between the fertilizer and the rate of yield.

The average yield of corn, for the three crops thus far harvested, has been nearly 52 bushels per acre; that of oats for two crops, 47 bushels, and that of two crops of wheat, more than 40 bushels, on the unfertilized land. Evidently, the problem here is largely one of maintaining the fertility of an already productive soil.

The soybean crop which should have been grown in 1913 was lost through failure to secure a stand at the first planting, and the second planting was disked in for wheat.

THE SUGARBEET ROTATION

Sugarbeets were planted according to plan in 1911, but the crop was lost because of the incessant rains at the time when they should have been harvested and in 1912 plots 14 and 22 to 27 inclusive were so injured by wireworms that no comparison could be made. Even under favorable seasonal conditions it would be too early as yet to attempt to draw more than the most general conclusions, but t would seem that, even on this fertile soil, the beet crop is likely to irespond profitably to a liberal use of fertilizers.

The low yields on plots 2 and 3 are probably due to some other cause than the fertilizer treatment, as plot 8, which receives the same two fertilizing materials in combination, shows a considerable increase in yield.

The addition of sugar factory lime seems to have produced a slight increase in yield of beets and oats, as shown by Tables II and III, but it has apparently had a contrary effect on the clover crop. This effect was so marked as to be plainly evident during the growth of the crop. As said above, however, it is too early to attempt any positive statements, especially in cases in which the outcome is so different from what is usually expected.

VARIETY TESTING

By DEPARTMENT OF AGRONOMY

WHEAT

Can Paulding county grow winter wheat? It is commonly believed that the black soils of northwestern Ohio cannot grow wheat profitably. It is doubtless true that the extremes in yield are wider there than in some parts of the state. The wheat crop of 1912 was a failure on the Paulding county experiment farm, as well as in that part of the state in general. Indeed, the whole state came very close to failure. In 1913, however, the experiment farm in Paulding county out yielded the state station at Wooster by an average of 13.45 bushels per acre—and the Wooster farm is located in one of the best wheat counties in the state.

TABLE VIII: Variety WHEAT test, Paulding County Experiment Farm, 1913

Variety	Actual yield per acre		Comparative yield per acre	
	Grain	Straw	Paulding	Wooster
	Bus.	Lbs.	Bus.	Bus.
Check (Velvet Chaff)	39.12	5,012	.....	.....
Nigger	47.33	4,610	49.24	34.26
Gypsy, Selection 6100	48.00	5,295	48.74	32.77
Mediterranean	40.75	3,330	40.31	28.91
Rudy	45.42	3,975	43.81	33.10
Check	45.00	4,875	.....	.....
Turkey Red	47.17	4,570	45.01	28.83
Fultz, Selection 5309	48.67	4,805	47.11	35.13
Poole	55.75	5,000	54.84	34.90
Check	42.50	5,150	.....	.....
Goens	39.33	5,490	39.04	31.85
Average of checks	42.21	5,012	42.21	29.55

Referring to Table VIII, it will be noted that the 4 highest yielding varieties are Poole, Nigger, Gypsy selection 6100, and Fultz selection 5309. The lowest yielding variety is a local variety known as Goens. This variety should not be condemned because of this one test, however, as it is likely better adapted to unfavorable, than to favorable seasons.

There are many things to be learned regarding the growing of wheat under northwestern Ohio conditions. When such records as the above, together with those in the fertility experiments, have accumulated for 10 years they will doubtless contribute to the solution of the problem.

CORN

The corn variety test includes 8 varieties, 3 of which are local strains, and 5 from other parts of the state, furnished by the State station. Referring to the comparative yield—the yield as corrected by the check plots—the two highest yielding varieties are the Darke County Mammoth and Wheeler's Clarage. Five of these varieties have been grown for 3 consecutive years. The three-year average yield is recorded in the final column. The yields in 1913 and 1911 were much lower than in 1912.

TABLE IX: Variety CORN test, Paulding County Experiment Farm

Variety	Actual yield per acre 1913		Comparative yields per acre	
	Grain	Stover	Paulding 1913	Paulding 3-yr. av.
	Bus.	Lbs.	Bus.	Bus.
Morrisy's Reid	41.21	3,700	40.97	54.17
Check (Darke County Mammoth)	45.00	3,300	.....	.....
Leaming	46.29	3,000	46.44	60.07
Ohio 84	48.00	2,500	48.54	.....
Wheeler's Clarage	50.57	2,200	51.50	62.53
Check	43.43	3,300	.....	.....
Cook's 75	50.07	3,400	50.79	59.79
Reid (Orcutt)	45.86	3,250	45.97	.....
Wheeler's Reid	47.86	4,050	47.36	58.12
Check	45.86	3,300	.....	.....
Darke County Mammoth (Station)	55.93	3,700	54.83	.....
Average yield of check plots	44.76	3,300	.....	.....

OATS

Nine varieties of oats are included in the test of 1913, seven of which were also tested in 1912. Their comparative yield for 1913 is shown in the third column of Table IX and the 2-year average yield in column five. The Big Four and the Little White stand highest in 1913, and Ohio 6222 (a selection of the Improved American) and Big Four in the 2-year average.

The yields of most of these varieties are given for Wooster in columns 4 and 6.

TABLE X: Variety OATS test, Paulding County Experiment Farm

Variety	Actual yield per acre 1913		Comparative yield per acre			
	Grain	Straw	Paulding 1913	Wooster 1913	Paulding 2-yr. av.	Wooster 6-yr. av.
	Bus.	Lbs.	Bus.	Bus.	Bus.	Bus.
Silver Mine	40.00	1,770	38.96	42.63	54.45	65.42
Check (Wideawake)	39.06	3,350	.....	.....	.....	.....
Ohio 6203 (Siberian)	28.75	2,130	27.87	49.90	49.87	69.55
Little White	44.84	2,570	44.11	.....	56.57	.....
Ohio 6222 (Improved American)	37.50	1,600	36.93	43.11	57.36	66.18
Check	38.44	3,070	.....	.....	.....	.....
New Senator	35.94	2,100	35.99	.....	.....	.....
Swedish Select	26.25	3,410	26.77	39.77	48.02	56.70
Big Four	45.31	1,500	46.30	41.89	57.03	65.50
Check	36.56	2,880	.....	.....	.....	.....
Ohio 7009 (Sixty Day)	*	*	.....	37.71	.....	66.52
Average of checks	.....	3,100	38.02	37.16	51.49	55.74

*Not tested.

SOYBEANS

Eight varieties of soybeans and one variety of cowpeas are included in this test. The latter was a failure, as cowpeas often are in northern Ohio. As a 4-year average at Wooster, the yield of cowpeas has been but little more than one-fourth that of soybeans. The Chestnut, a yellow bean, gave the highest yield, with a selection of Ito San (Ohio 9100) second.

Yields of these varieties as grown at Wooster are given for 1913, as well as the average yield for the last four years.

TABLE XI: Variety SOYBEAN test, Paulding County Experiment Farm, 1913.

Variety	Color of brans	Actual yield per acre Grain Bus.	Comparative yield of grain per acre		
			Paulding Bus.	Wooster 1913 Bus.	Wooster 4-year average Bus.
Check (Medium Green)	Green	12.83	.....	.....	.....
Ohio 9100 (Ito San)	Yellow	21.67	22.38	20.83	19.80
Ohio 9035	Brown	20.33	20.98	16.62	26.29
Check	.....	13.00	.....	.....	.....
Mongol	Yellow	19.33	19.21	16.31	.....
Chestnut	Yellow	29.33	28.49	20.51	24.65
Check	.....	15.17	.....	.....	.....
Ebony	Black	21.33	20.34	18.07	21.93
Ohio 7496	Yellow	19.58	19.17	21.35	25.98
Check	.....	13.42	.....	.....	.....
Ohio 9016	Yellow	16.67	16.77	25.69	26.54
New Era Cowpeas	Mottled	Failure	.....	8.33	6.77*
Check	.....	13.67	.....	.....	.....
Average of check plots	.....	13.60	.....	17.91	22.84

*A 3-year average.

ADDITIONAL WORK

Reference to the proposed plan of management of the Paulding County Experiment Farm, as published in Bulletin 241, will show that, in addition to a small amount of orchard work, intended to apply especially to the farm orchard, and which is already under way, it was proposed to institute experiments in feeding, having as their chief objects the utilization of the corn and the crop residues, as against selling the grain and returning the residue to the soil.

Two lines of work in feeding are suggested by Paulding county conditions: the winter feeding of cattle or sheep, to utilize both the grain and stover of the corn crop, the clover hay and the sugarbeet pulp, and the summer and fall feeding of hogs by pasturing them on clover and "hogging down" a considerable part of the corn crop, thus reducing the labor cost of harvesting.

Economical winter feeding necessitates more shelter than it has as yet been possible to provide with available funds, but steps have been taken to begin experiments in swine husbandry at an early date.